

2010

# The Effects of Social Skills Training on Individuals with Schizophrenia

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## Recommended Citation

Woolf, Esje, "The Effects of Social Skills Training on Individuals with Schizophrenia" (2010). *Mental Health CATs*. Paper 15.  
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# The Effects of Social Skills Training on Individuals with Schizophrenia

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# The Effects of Social Skills Training on Individuals with Schizophrenia

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**Date:** November 2010

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## **CLINICAL SCENARIO:**

After working with clients with schizophrenia during a fieldwork experience I became interested in this population. I decided to research interventions occupational therapists could potentially use when working with this population and found several articles on social skills training (SST). I decided to focus on social skills training and its effects on individuals with schizophrenia to determine if it is a useful intervention that I should use in my future practice as an occupational therapist.

As one of the defining characteristics of schizophrenia is poor psychosocial functioning, it is important to research potential interventions for improved social functioning and their outcomes. A wealth of evidence has found a strong relationship between impaired social skills in occupational, social, and recreational situations, and worse psychosocial adjustment in clients with schizophrenia. Impairments in social skill often predate the onset of schizophrenia, are present at the first episode, are stable over time in the absence of psychosocial treatment, and persist into older adulthood. Social skills training had the potential to improve the social functioning of individuals with schizophrenia, and by doing so increase their engagement in meaningful occupations and overall satisfaction with life.

## **FOCUSSED CLINICAL QUESTION:**

What are the effects of social skills training on individuals with schizophrenia?

## **SUMMARY of Search, 'Best' Evidence appraised, and Key Findings:**

- 15 articles were found that addressed the clinical research question and 5 were chosen as "best" evidence articles for this critically appraised topic.
- The randomized control trial (RCT) by Granholm, McQuaid, Mclure, Auslander, Perivoliotis, Pedrelli, Patterson and Jeste (2005) has been deemed the best evidence to date.

- This RCT sought to test the hypotheses that patients receiving treatment-as-usual plus cognitive behavioural social skills training would show significantly better outcomes, especially in terms of social functioning, than patients receiving only treatment as usual. The study also focused on the relationship between changes in cognitive insight related to changes in symptom outcomes.
- The study compared 2 treatment conditions: 1) treatment-as-usual versus 2) treatment-as-usual plus cognitive behavioral (CBT) and social skills training (SST) for middle-aged and older outpatients with chronic schizophrenia.
- Baseline assessments were followed up at mid-treatment (3 months), to determine process and symptom outcomes, and at the end of treatment (6 months).
- Evidence was established that showed that a combination treatment-as-usual plus CBT and SST may help to improve everyday functioning for middle-aged and older individuals with schizophrenia.
- The RCT by Tsang and Pearson (2001) examined the effects of work-related SST with and without follow up support on the ability of individuals with schizophrenia to obtain and maintain employment. The study resulted in significant findings to support work-related SST with follow up support over work-related SST without follow support and standard care (no SST) on the ability of participants to obtain and maintain a job.
- The RCT by Chien, Ku, Lu, Chu, Tao, and Chou (2003) examined the effects of SST on the social skills of schizophrenic patients in the psychiatric ward of a psychiatric hospital. The study found significant improvement in the conversation and assertiveness skills of the experimental group receiving SST that were not observed in the control group receiving routine nursing care.
- The before and after study by Marder, Wirshing, Mintz, Mckenzie, Johnston, Eckman, Lebell, Zimmerman and Liberman (1996) found significant main effects favouring behaviorally oriented SST for improvements in important areas of social function and adjustment over supportive group therapy. This result was most pronounced among subjects who had also been assigned drug supplementation.
- The meta-analysis by Kutz and Mueser (2008) sought to build upon previous meta-analysis of SST for individuals with schizophrenia. The study only included RCT on SST with samples of client's with diagnosis of schizophrenia or schizoaffective disorder, investigated the impact of training variables, experimental design issues, and participant characteristics, and categorized and evaluated outcome measures on a continuum of hypothesized proximal versus distal effects of SST. The significant results supported the utility of SST for improving functional outcomes like social adjustment and independent living. SST also had a moderate average effect size on improving negative symptoms which are strongly associated with impaired psychosocial functioning in schizophrenia.

**CLINICAL BOTTOM LINE:**

The best evidence RCT comparing treatment as usual versus treatment as usual plus cognitive behavioral (CBT) and social skills training (SST) for middle-aged and older outpatients with chronic schizophrenia determined that individuals who received treatment-as-usual plus CBT and SST performed social functioning activities significantly more frequently than individuals who received treatment-as-usual.

The 4 other best evidence critically appraised articles also found significant evidence to support the utilization of SST to improve areas of social function for individuals with schizophrenia.

**Limitation of this CAT:**

The critically appraised paper has been individually prepared by a master's of occupational therapy student as part of a university project and reviewed by a faculty member, but has not been externally peer-reviewed. The critically appraised paper has been peer reviewed by other novice occupational therapy colleagues.

**SEARCH STRATEGY:****Terms used to guide Search Strategy:**

- Patient/Client Group: Individuals with schizophrenia
- Intervention (or Assessment): Social skills training (SST)
- Comparison: Individuals with schizophrenia who do not receive SST
- Outcome(s): Improvement in areas of social functioning

Date	Databases and sites searched	Search Terms	Limits used
9/27/10	CINAHL (EBSCOhost)	Skills training AND schizophrenia Retrieved=12 Repeated= 1 Relevant=3	Limited to humans, English only full-text articles, and published after 1995
10/4/10	PsycInfo	Social skills training AND schizophrenia Retrieved=9 Repeated= 0 Relevant=7	Limited to humans, English only, full-text articles, and published after 1995
10/12/10	Ovid Medline	Social skills training AND schizophrenia Retrieved=11 Repeated=4 Relevant=5	Limited to humans, English only full-text articles, and published after 1995

## INCLUSION and EXCLUSION CRITERIA

- Inclusion:
  - English language only
  - Full-text articles only
  - Study participants with primary diagnosis of schizophrenia or schizoaffective disorder
- Exclusion:
  - Studies prior to 1995
  - Studies with participants younger than 18.

## RESULTS OF SEARCH

**5 relevant studies that met the inclusion and exclusion criteria were located and categorized as shown in Table 1 (based on Levels of Evidence, Evidence Based Rehabilitation, 2008)**

**Table 1:** Summary of Study Designs of Articles retrieved

Study Design/ Methodology of Articles Retrieved	Level	Number Located	Author (Year)

<b>Randomized control trial</b>	<b>1b</b>	<b>3</b>	<p>Tsang, H.W.H &amp; Pearson, V. (2001)</p> <p>Chien, H.C., Ku, C.H., Lu, R.B., Chu, H., Tao, Y.H. &amp; Chou, K.R. (2003)</p> <p>Granholm, E., McQuaid, J.R., Mclure, F.S., Auslander, L.A., Perivoliotis, D., Pedrelli, P., Patterson T. &amp; Jeste, D.V. (2005)</p>
<b>Before and after</b>	<b>3</b>	<b>1</b>	<p>Marder, S.R, Wirshing, W.C., Mintz, J., McKenzie, J., Johnston, K., Eckman, T.A., Lebell, M., Zimmerman, K. &amp; Liberman, R.P. (1996)</p>
<b>Meta- analysis</b>	<b>1a</b>	<b>1</b>	<p>Kurtz, M.M. &amp; Mueser, K.T. (2008)</p>

## BEST EVIDENCE

The following study/paper was identified as the 'best' evidence and selected for critical appraisal. Reasons for selecting this study were:

- Granholm, E., McQuaid, J.R., Mclure, F.S., Auslander, L.A., Perivoliotis, D., Pedrelli, P., Patterson, T., Jeste, D.V. (2005). A randomized controlled trial of cognitive behavioral social skills training program for middle-aged and older outpatients with chronic schizophrenia. *American Journal of Psychiatry*, 162, 520-529.

### The reasons for selecting this paper:

- The study best addressed my critical research question.
- The results of this study are statistically significant.
- The study's high level of evidence.

## SUMMARY OF BEST EVIDENCE

**Table 2:** Description and appraisal of

Granholm, E., McQuaid, J.R., Mclure, F.S., Auslander, L.A., Perivoliotis, D., Pedrelli, P., Patterson, T., Jeste, D.V., (2005). A randomized controlled trial of cognitive behavioral social skills training program for middle-aged and older outpatients with chronic schizophrenia. *American Journal of Psychiatry*, 162, 520-529.

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**Aim/Objective of the Study/Systematic Review:**

To test the hypothesis that patients receiving treatment-as-usual plus CBT and SST would show significantly better outcomes, especially in terms of social functioning, than patients only receiving treatment-as-usual. The study also sought to analyse the relationship between change in cognitive insight and change in symptom outcomes.

**Study Design:**

This study was a randomized controlled clinical trial of 2 treatment conditions: 1) treatment as usual versus 2) treatment-as-usual plus cognitive behavioral and social skills training for middle-aged and older outpatients with chronic schizophrenia. After patients provided written informed consent and underwent baseline assessments, they were randomly assigned to one of the two treatment conditions. Assessment were followed up at mid-treatment (3 months), to determine process and symptom outcomes, and at the end of treatment (6 months), to access functioning, symptom, and process outcomes. A stratified randomization procedure was used to assign participants to treatments within sites and the project coordinator was the only staff person other than the therapists with knowledge of group membership. Assessors were blind to treatment group.

**Setting:**

University of California, San Diego, Advanced Center for Intervention and Services Research for Psychosis in Older Adults research center and different board-and-care facilities in the community.

**Participants:**

Community-dwelling patients with schizophrenia or schizoaffective disorder were recruited from treatment and residential settings in San Diego County from 1999 to 2003 through the University of California and the San Diego Advanced Center for Interventions and Services Research for Psychosis in Older Adults. The sample was not a convenience sample as the researchers attempted to insure that this sample is was an accurate representation of a larger population. The participants were 42-74 years old. The majority of participants were male, high school educated, Caucasian, living in assisted housing, and nonveterans. Exclusion criteria included disabling medical problems that would interfere with testing, absence of medical records to inform diagnosis, and diagnosis of dependence on substances other than nicotine or caffeine within the past 6 months. Diagnoses were based on the Structured Clinical Interview for DSM-IV. Of 76 total participants diagnosis included; 22 schizophrenic, paranoid type; 22 schizophrenic, undifferentiated type; 2 schizophrenic, disorganized type; 2 schizophrenic, residual type; and 28 schizoaffective disorder. At baseline, 46 participants were taking one or more atypical antipsychotic medications. A total of 76 participants were randomly allocated to treatments. 39 participants were allocated to treatment as usual, and 37 were allocated to treatment-as-usual plus CBT and SST. At baseline, the two treatment groups did not significantly differ on any demographic or outcome variable.

At mid-treatment, 37 of the 39 participants from the treatment-as-usual group were accessed to determine process and symptom outcomes as 2 participants refused assessment. At mid treatment, in the treatment-as -usual plus cognitive behavioural therapy and social skill training group, 33 of the 37 participants were accessed as 3 participants refused assessment, and 1 participant could not be located. End-of-treatment assessments to access functioning, symptom, and process outcomes



included 22 assessed and 6 refused from the treatment-as-usual group, and 32 assessed, 4 refused, and 1 unable to locate from the treatment-as-usual plus CBT and SST group. 33 participants completed assessments from the treatment-as-usual and 32 from the treatment-as-usual plus CBT and SST by the time of analysis.

### **Intervention Investigated**

*Control:* The patients continued routine ongoing care. Medication guidelines were not part of this intervention.

*Experimental:* Participants received 24 weekly 2-hour group psychotherapy sessions. The treatment manual included a patient workbook that contained homework forms. The social skills training was based on social skills interventions from available Psychiatric Rehabilitation Consultants. The cognitive behavioral therapy was developed specifically for patients with schizophrenia, and age related modifications were made. A modular design with rolling admissions was used. Study participants started at the beginning of any three four-session-modules. The modules were self-contained, including orientation to the group in the first session and progression through skills across sessions. The patients completed all three modules (thought-challenging module, asking for support module, solving problems module) twice, for a total of 24 sessions. The modules were repeated to compensate for cognitive impairment and to examine whether repeated exposure to the training and materials increased skill acquisition.

Doctoral-level psychologists or senior graduate students in clinical psychologists with at least master's-level training and 2 years of clinical experience delivered the cognitive behavioural social skills training intervention. Two therapists led each group.

### **Outcome Measures**

Outcome areas measured included social functioning, positive and negative syndrome symptoms, cognitive insight, knowledge of the specific skills and information taught in CBT and SST, and medications. Social functioning was the primary outcome measured. Positive and negative syndrome symptoms were secondary outcome measures.

Social functioning was accessed by using the Independent Living Skills Survey and the UCSD-Performance-Based skills assessment.

The Independent Living Skills Survey was administered in an interview format. The instrument is a self-report measure of basic functional living skills performed in the last month. The instrument accessed 10 functional domains. However, the composite score computed was the average of scores of five relevant functional domains- appearance and clothing, personal hygiene, health maintenance, transportation, and leisure and community. These domains were chosen as they are sensitive to functional impairment in older adults. The other five domains were not used, as they did not apply to the majority of study participants who lived in settings where cooking and cleaning services were provided for them. Almost all of the participants were retired or unemployed leaving them ineligible for assessment in the remaining domains. Data from three research projects analyzed the two versions of Independent Living Skills Survey to determine the versions' internal consistency, stability, interrater reliability, sensitivity to the effects of skills training, and concurrent and predictive validity. The results indicated that the two versions have acceptable psychometric

characteristics, and suggested it be used for planning individualized treatment, evaluating programmatic services, and determining eligibility for benefits.

The UCSD-Performance-Based skills Assessment is a performance-based measure that accesses five domains of functioning- household chores, communication, finance, transportation, and planning recreational activities. The instrument measures the extent to which patients are capable of performing specific functional living skills, regardless of whether or not they actually performed the skill. The discriminant validity of the UPSA is adequate.

To access changes in positive and negative symptoms The Positive and Negative Syndrome Scale and the Hamilton Depression Rating Scale were administered. The Positive and Negative Syndrome scale has been found to have good reliability, criterion-related validity, and construct validity. The Hamilton Depression Rating Scale's internal reliability is adequate, but many scale items have been found to be poor contributors to the measurement of depression severity; others have poor interrater and retest reliability. The scales content validity is poor, while its convergent validity and discriminant validity are adequate.

To access and measure changes in cognitive insight the Beck Cognitive Insight Scale, a self-report inventory that includes two subscales (self-effectiveness and self-certainty), was used. The scale demonstrated good convergent, discriminant, and construct validity. The Comprehensive module Test accessed specific skills and information taught in CBT and SST. Portions of this test were used to access symptom knowledge, behavioral coping skills, and the ability to apply this knowledge in response to role-playing and vignettes. Additional questions and vignettes were added to access mastery of other skills addressed in CBT and SST training, including communication, problem solving, and thought challenging. The total score (58) of the Comprehensive Module Test was used. Types of medication, dose, and changes in medication were recorded and verified by psychiatrists or board-and-care staff.

### **Main Findings:**

**TABLE 1. Baseline Characteristics of Middle-Aged or Older Patients With Chronic Schizophrenia or Schizoaffective Disorder Who Were Randomly Assigned to Treatment as Usual With or Without Cognitive Behavioral Social Skills Training**

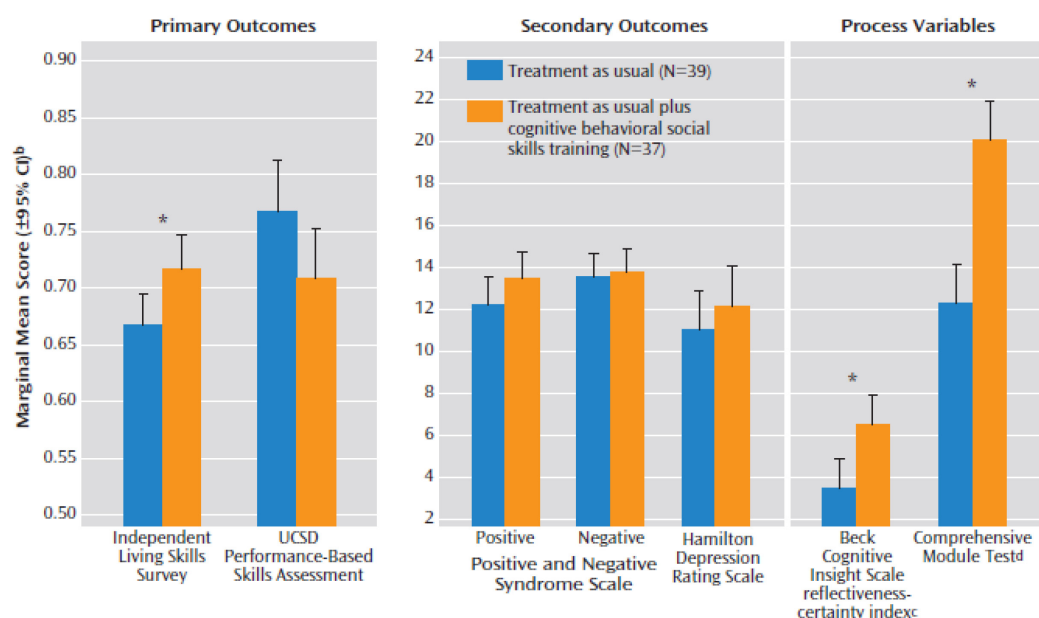
Characteristic	Treatment as Usual Plus Cognitive Behavioral Social Skills Training (N=37)		Treatment as Usual Only (N=39)		Analysis		
	N	%	N	%	$\chi^2$	df	p
Male gender	26	70	30	77	0.43	1	0.51
Caucasian ethnicity	29	78	31	79	0.01	1	0.91
Employed	1	3	1	3	0.00	1	0.97
Board-and-care housing	23	62	24	62	0.00	1	0.96
Veteran	14	38	14	36	0.03	1	0.87
Hallucinations <sup>a</sup>	9	24	13	33	0.75	1	0.39
Delusions <sup>a</sup>	12	32	18	46	1.50	1	0.23
	Mean	SD	Mean	SD	t	df	p
Age (years)	54.5	7.0	53.1	7.5	0.86	74	0.40
Education (years)	12.8	2.4	12.2	2.0	1.31	74	0.20
Age at onset (years)	26.4	10.9	24.7	10.0	0.72	74	0.48
Illness duration (years)	30.1	11.3	28.4	10.5	0.65	74	0.52
Beck Cognitive Insight Scale reflectiveness-certainty index <sup>b</sup>	4.1	5.3	5.9	4.7	1.59	74	0.12
Comprehensive Module Test total score <sup>c</sup>	13.0	6.0	12.6	6.9	0.28	74	0.79
Positive and Negative Syndrome Scale scores							
Total	51.5	13.2	56.1	14.8	1.36	74	0.18
Positive symptoms	11.8	4.5	13.7	5.2	1.63	74	0.11
Negative symptoms	14.3	5.1	15.2	5.7	0.66	74	0.52
Hamilton Depression Rating Scale score	13.5	9.0	14.2	8.8	0.24	74	0.82
Independent Living Skills Survey composite score	0.69	0.10	0.71	0.09	1.11	71	0.27
UCSD Performance-Based Skills Assessment score	0.73	0.18	0.67	0.17	1.44	71	0.16

<sup>a</sup> Rating of 3 (indicating mild) or greater on the Positive and Negative Syndrome Scale item for hallucinations or delusions.

<sup>b</sup> Self-reflectiveness score minus self-certainty score.

<sup>c</sup> Assesses knowledge of the specific skills and information taught in cognitive behavioral social skills training.

Table: Granholm, E., McQuaid, J.R., Mclure, F.S., Auslander, L.A., Perivoliotis, D., Pedrelli, P., Patterson, T., Jeste, D.V. (2005). A randomized controlled trial of cognitive behavioral social skills training program for middle-aged and older outpatients with chronic schizophrenia. *American Journal of Psychiatry*, 162, 520-529. (Copyright © 2005 American Psychiatric Association)

**FIGURE 2. Outcome Measures for Middle-Aged or Older Patients With Chronic Schizophrenia or Schizoaffective Disorder Who Received 6 Months of Treatment as Usual With or Without Cognitive Behavioral Social Skills Training<sup>a</sup>**

<sup>a</sup> The scores were averaged across sites and across assessment times (midtreatment and end of treatment) and adjusted for baseline. Effects of treatment group were determined by ANOVAs.

<sup>b</sup> Adjusted for baseline value.

<sup>c</sup> Self-reflectiveness score minus self-certainty score.

<sup>d</sup> Assesses knowledge of the specific skills and information taught in cognitive behavioral social skills training.

\*p<0.05.

Figure: Granholm, E., McQuaid, J.R., Mclure, F.S., Auslander, L.A., Perivoliotis, D., Pedrelli, P., Patterson, T., Jeste, D.V. (2005). A randomized controlled trial of cognitive behavioral social skills training program for middle-aged and older outpatients with chronic schizophrenia. *American Journal of Psychiatry*, 162, 520-529. (Copyright © 2005 American Psychiatric Association)

Figure 2 indicates clinically significant results for the treatment-as-usual- plus CBT and SST group as measured by the Independent Living Skills Survey, Beck Cognitive Insight Scale (reflectiveness-certainty index), and the Comprehensive module test. The asterisk marks ( \* ) seen in Figure 2 indicate where P values were found to be statistically significant ( $p < 0.05$ ).

**TABLE 2. Correlations Between Change in Cognitive Insight and Change in Symptoms for 37 Middle-Aged or Older Patients With Chronic Schizophrenia or Schizoaffective Disorder Who Received 6 Months of Treatment as Usual Plus Cognitive Behavioral Social Skills Training**

Measure From Beck Cognitive Insight Scale	Correlation of Change in Cognitive Insight With Change in Symptom Rating (r) <sup>a</sup>							
	Positive and Negative Syndrome Scale						Hamilton Depression Rating Scale	
	Total		Positive Symptoms		Negative Symptoms			
	Midtreatment	End of Treatment	Midtreatment	End of Treatment	Midtreatment	End of Treatment	Midtreatment	End of Treatment
Reflectiveness-certainty index <sup>b</sup>	-0.06	-0.29	-0.30	-0.38*	-0.08	-0.22	0.32*	-0.06
Self-reflectiveness	-0.04	-0.14	-0.30	-0.36*	-0.18	-0.17	-0.04	-0.14
Self-certainty	-0.33*	-0.09	0.01	0.05	-0.14	-0.09	-0.59*	-0.10

<sup>a</sup> Changes in scores were relative to baseline values. Decreases (negative change scores) for symptom variables indicated symptom improvement; increases in the reflectiveness-certainty index and the self-reflectiveness score indicated improved insight, whereas decreases in the self-certainty scores (overconfidence) indicated improved insight.

<sup>b</sup> Self-reflectiveness score minus self-certainty score.

\* $p \leq 0.05$ .

Table: Granholm, E., McQuaid, J.R., Mclure, F.S., Auslander, L.A., Perivoliotis, D., Pedrelli, P., Patterson, T., Jeste, D.V. (2005). A randomized controlled trial of cognitive behavioral social skills training program for middle-aged and older outpatients with chronic schizophrenia. *American Journal of Psychiatry*, 162, 520-529. (Copyright © 2005 American Psychiatric Association)

Table 2 indicates that for participants in the treatment-as-usual plus CBT and SST, greater increases in the reflectiveness-certainty index and the self-reflectiveness subscale score were significantly correlated with a greater reduction in positive symptoms at the end of treatment. Table 2 also indicates, in contrast, that a greater increase in reflective-certainty index and a greater reduction in self-certainty (indicating better insight through reduced confidence in aberrant beliefs) were significantly correlated with increased depression at midtreatment, but not by end of treatment.

### Original Authors' Conclusions

To the best of the author's knowledge, this is the first published RCT to examine a psychological intervention designed for the unique needs of older patients with psychotic disorders. This study adds to the growing evidence of the efficacy of cognitive behavioral therapy and social skills training interventions in schizophrenia. However, given the heterogeneity of schizophrenia, it is unlikely that a single cognitive behavioral therapy intervention will work equally well for all types of patients. For this reason, researchers should continue to develop and test group and individual cognitive behaviour therapy and social skills training interventions that are tailored to the unique needs of different subgroups of patients with schizophrenia in order to identify which treatments are most effective for which patients and in what circumstances.

### Critical Appraisal:

#### Validity

Seasonal bias may have been operating as older adults tend to be healthier in the

summer than in the winter and the dates of the study are unknown. Intervention/performance bias may also have been operating as the study took place over 6 months and older adults may experience declines in health which could potentially influence performance.

A limitation of the study which lessens its validity, is that assessments used to measure outcomes measured skills that were not addressed by the cognitive behavioral therapy and social skills training. Some skills that were not measured by the assessments used improved over the course of the study which also affects the validity results of this study.

The PEDro scale is a scale used to rate the methodological quality of randomized control trials. Points are awarded only when criterion are clearly satisfied and reported. The studies article PEDro score totalled 10/11, with a point deducted due to unknowns regarding blinding of all assessors

### **Interpretation of Results**

An intent-to-treat analysis was used to examine all outcome variables. Differences between treatment groups at baseline were examined by using two-tailed t tests for continuous variables and chi-square tests for categorical variables. At baseline, the two groups did not differ significantly on any demographic or outcome variable, which suggests no benefit found from the studies repeating of modules.

A split-plot repeated-measures analysis of covariance (ANCOVA) was used to test the difference between treatment groups at each follow-up point for each outcome measure. Predicted relationships between change in symptoms and change in cognitive insight were examined by computing Pearson's r correlations between symptom change scores and cognitive insight change scores at midtreatment and at the end of treatment.

The treatment group effect (treatment-as-usual plus CBT and SST) was significant for frequency of social activities (Independent Living Skills Survey),  $p=0.02$ , cognitive insight (Beck Cognitive Insight Scale),  $p=0.002$ , and mastery of cognitive behavioral social skills training (Comprehensive Module Test),  $p<0.001$ . The treatment group effect was not significant for skill at performing everyday functioning activities (USSD performance-Based Skills Assessment),  $p=0.52$ , for any symptoms measured with the positive and negative Syndrome Scale, or the Hamilton depression scale. Analysis of the group-by-time interaction was not significant for any outcome variable, indicating that the difference between treatment groups were similar at midtreatment and at the end of treatment. The group-by-time interaction was not significant for any outcome variable.

For participants in the treatment-as-usual plus CBT and SST, greater increases in the reflectiveness-certainty index and the self-reflectiveness and subscale score on the Beck Cognitive Insight Scale, were significantly correlated with a greater reduction in positive symptoms at the end of treatment.

As far as medication outcome measures, the treatment group effect at the end of treatment, determined by ANCOVA with the baseline value as a covariate, was not significant.



**Summary/Conclusion:**

After treatment, participants of the study who received treatment-as-usual plus CBT and SST training performed social functioning activities significantly more frequently than participants receiving only treatment-as-usual. The treatment groups were not found to differ significantly in their general skill at performing specific everyday functioning activities after treatment. However cognitive behavioral SST does not specifically train all the skills measured by the USCD Performance-Based Skills Assessment, and this may have contributed to a lack of improvement on this measure. Despite the lack of improvement on actual general skill at performing specific everyday functioning activities, performing social activities more frequently is considered an improvement in everyday functioning, and is especially important in this patient population, given that despite relatively effective pharmacologic control of psychiatric symptoms impairments in social functioning persist in these patients.

Participants who received treatment as usual plus CBT and SST showed significantly greater cognitive insight after treatment than participants who received treatment-as-usual. The study also found some evidence that the treatment group effect on psychiatric symptoms was related to changes in cognitive insight. Improvement in overall cognitive insight was found to be correlated with reduction in positive symptoms at the end of treatment for participants who received CBT and SST.

Lack of a significant treatment group effect on positive or negative symptoms, or depression was probably due to the fact that symptoms were well controlled by medication at baseline.

No significant benefit was found from repeating the intervention modules.

The results of this study indicate that the use of CBT and SST interventions as having a significant impact on improvement on important aspects of social functioning in middle- aged and older adult outpatient individuals with schizophrenia. The main findings of the study were that participants who received CBT and SST performed social activities significantly more frequently and achieved significantly greater changes in cognitive insight than the participants who only received treatment-as-usual.

**Table x: Characteristics of included studies**

<b>Study</b>	<b>Summary of the Research Study (purpose, method, intervention, findings)</b>
<b>Work-related social skills training for people with schizophrenia in Hong Kong,</b>  Tsang, H.W.H, Pearson, V. 2001. Work-related	<b>Purpose:</b> To examine the effect of social skills training with and without follow up support on the ability of individuals with schizophrenia to find and maintain employment. <b>Method:</b> A RCT in which participants were randomly

<p>social skills training for people with schizophrenia in Hong Kong. <i>Schizophrenia Bulletin</i>, 27(1), 139-148.</p>	<p>assigned too one of the three groups; 1) social skills training with follow-up support, 2) social skills training without follow-up support 3) standard care (no social skills training.) Patients were recruited from nine community-based, staffed residential facilities mentally ill people.</p> <p><b>Intervention:</b> The social skills training program consisted of 10 weekly group sessions lasting 1.5- 2 hours.</p> <p><b>Findings:</b> The study's findings provide evidence that social skills training programs can be significantly useful in improving social skills necessary for finding and maintaining a job, especially training programs with follow-up support.</p>
<p><b>Effects of social skills training on improving social skills of patients with schizophrenia.</b></p> <p>Chien, H.C., Ku, C.H., Lu, R.B., Chu, H., Tao, Y.H., Chou, K.R. 2003. Effects of social skills training on improving social skills of patients with schizophrenia. <i>Archives of psychiatric Nursing</i>, Vol. XVII, 228-236.</p>	<p><b>Purpose:</b> To examine the effects of social skills training on the social skills of schizophrenic patients.</p> <p><b>Method:</b> The study, a RCT, was conducted in a psychiatric ward of a psychiatric hospital in Japan. Patients diagnosed with schizophrenia were randomly assigned to the experimental or control group. Social skills training methods were divided into five parts; explanation, demonstration, role-play, feedback and social enhancement, and a homework exercise.</p> <p><b>Intervention:</b> Subjects in the experimental group received 60-minute social skills training courses twice a week, for 4 weeks, for at total of 8 group training sessions. Subjects in the control group received routine nursing care.</p> <p><b>Findings:</b> Overtime, there was a significant improvement in the social skills of the experimental group that was not observed in the control group.</p>
<p><b>Two-year outcome of social skills training and group psychotherapy for outpatients with schizophrenia.</b></p> <p>Marder, S.R., Wirshing, W.C., Mintz, J., McKenzie, J., Johnston, K., Eckman, T.A., Lebell, M., Zimmerman, K., Liberman, R.P. 1996. Two-year outcome of social skills training and group psychotherapy for outpatients with schizophrenia. <i>American Journal of Psychiatry</i>. 153,</p>	<p><b>Purpose:</b> To evaluate the effectiveness of behaviorally oriented social skills training and supportive group therapy for improving the social adjustment of schizophrenic patients living in the community and protecting them against psychotic relapse.</p> <p><b>Method:</b> Before study entry each patient was stabilized on a low dose of fluphenazine decanoate. After completing the pre-study stabilization, patients were randomly assigned to receive either behaviorally oriented social skills training or supportive group therapy. Participants included 80 male outpatients undergoing treatment at the West Los Angeles Veterans Administration with diagnoses if schizophrenia.</p> <p><b>Intervention:</b> The behaviorally oriented social skills training group participated in training modules. Each</p>

1585-1592.	<p>treatment was administered twice weekly for 90 minutes for the first 6 months of the study each treatment session and then weekly for 90 minutes for the rest of the remaining 18 months. Interventions for the supportive group psychotherapy group was guided by goals for reality adaptation. Frequency of intervention for this group was comparable to the behaviorally oriented SST group.</p> <p><b>Findings:</b> The study found a significant advantage of social skills training in combination with supplemental drug treatment over supportive group therapy in combination with supplemental drug treatment in terms of improvements in important areas of social functioning.</p>
<p><b>A meta-analysis of controlled research on social skills training for schizophrenia</b></p> <p>Kutz, M.M., Mueser, K.T. 2008. A meta-analysis of controlled research on social skills training for schizophrenia. <i>Journal Consulting and Clinical Psychology</i>, Vol. 76, no. 3, 491-504.</p>	<p><b>Purpose:</b> A meta-analysis of RCTs to build on the justification of SST as a treatment intervention for individuals with schizophrenia.</p> <p><b>Method:</b> The study only included RCT on SST with samples of clients with diagnosis of schizophrenia or schizoaffective disorder, investigated the impact of training variables, experimental design issues, and participant characteristics, and categorized and evaluated outcome measures on a continuum of hypothesized proximal versus distal effects of SST.</p> <p><b>Intervention:</b> Studies that included SST as one element of many interventions were not included as it would not be possible to determine the effects of SST from other interventions.</p> <p><b>Findings:</b> The results of the meta analysis were consistent with the authors' hypothesis that the impact of SST is strongest on those outcome domains believed to be most proximal to the intervention and weakest on the most distal domains. These results support the utility of SST for significantly improving functional outcomes like social adjustment and independent living. SST also had a moderate average effect size on improving negative symptoms which are strongly associated with impaired psychosocial functioning in schizophrenia.</p>

## IMPLICATIONS FOR PRACTICE, EDUCATION and FUTURE RESEARCH

The participants who received treatment as usual plus CBT and SST performed social functioning activities significantly more frequently than participants in treatment as usual. This has clinical significance in that CBT and SST can potentially decrease impairments in social functioning in individuals with schizophrenia. Practitioners can potentially use the experimental interventions used in this study, specifically social



skills training, as a part of their treatment when working with the schizophrenic population.

When considering the results of this study and its clinical significance, the studies strengths and limitations should be examined. The strengths of this study included randomization to treatments, blind raters, good matching of groups at baseline on all variables, a manualized intervention, monitoring of treatment fidelity, broad outcome measures, good attendance and retention of participants, and inclusion of midtreatment assessments and cognitive insight variables to examine possible mechanisms of change. Limitations of this study included a moderately small sample size, lack of control for nonspecific therapist contact factors, and the potential seasonal and intervention/performance biases.

Future research is necessary given the heterogeneity of schizophrenia. It is unlikely that a single cognitive behavioral therapy or social skills intervention will work equally well for all types of schizophrenic patients due to variation in age, gender, acutely versus chronically ill, etc. For this reason, researchers should continue to develop and test group and individual cognitive behaviour therapy and social skills training interventions that are tailored to the unique needs of different subgroups of patients with schizophrenia in order to identify which treatments are most effective for which patients and in what circumstances.

Cognitive behavioral therapy and social skills training are interventions utilized by practitioners in the United States as well as abroad. Cost of these treatments vary, but can be administered at relatively low cost. As there is a growing body of evidence that cognitive behavioral therapy and social skills training are effective interventions for improving social functioning in individuals with schizophrenia local therapist and undergraduates should receive education about these interventions.

The other studies included in this critically appraised topic all resulted in significant findings to support the utilization of social skills training to improve aspects of social functioning.

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